

Using Model Builder to Build a Regional Transit Oriented Development (TOD) Database

Session Title: Developing Modeling Techniques in ArcGIS



TOD Data Collection

- Document existing conditions around station areas.
- Provide a baseline for measuring key performance measures related to TOD.
- Aid in updating long-term transportation and land use planning.

- Online TOD Database and Map
- Pedestrian Service Areas (“Walksheds”) Related to Transit
 - ↳ *What areas are truly accessible to transit?*

TOD Data Collection (DATA)

- Site-specific development projects located within one-half mile of an existing transit stop. **(Points)**
- Categorized based on the primary use (Office, Institutional, Residential, Retail, or Mixed).
- Track and display investment and development related to transit.
- Represent the area within a defined distance/radius from the transit station (typically one-quarter or one-half mile areas). **(Polygons)**
- Capture information that is not necessarily specific to a particular site (demographics, density, employment, etc.).
- Establish baseline criteria for evaluation over a period of time.

TOD Data Collection

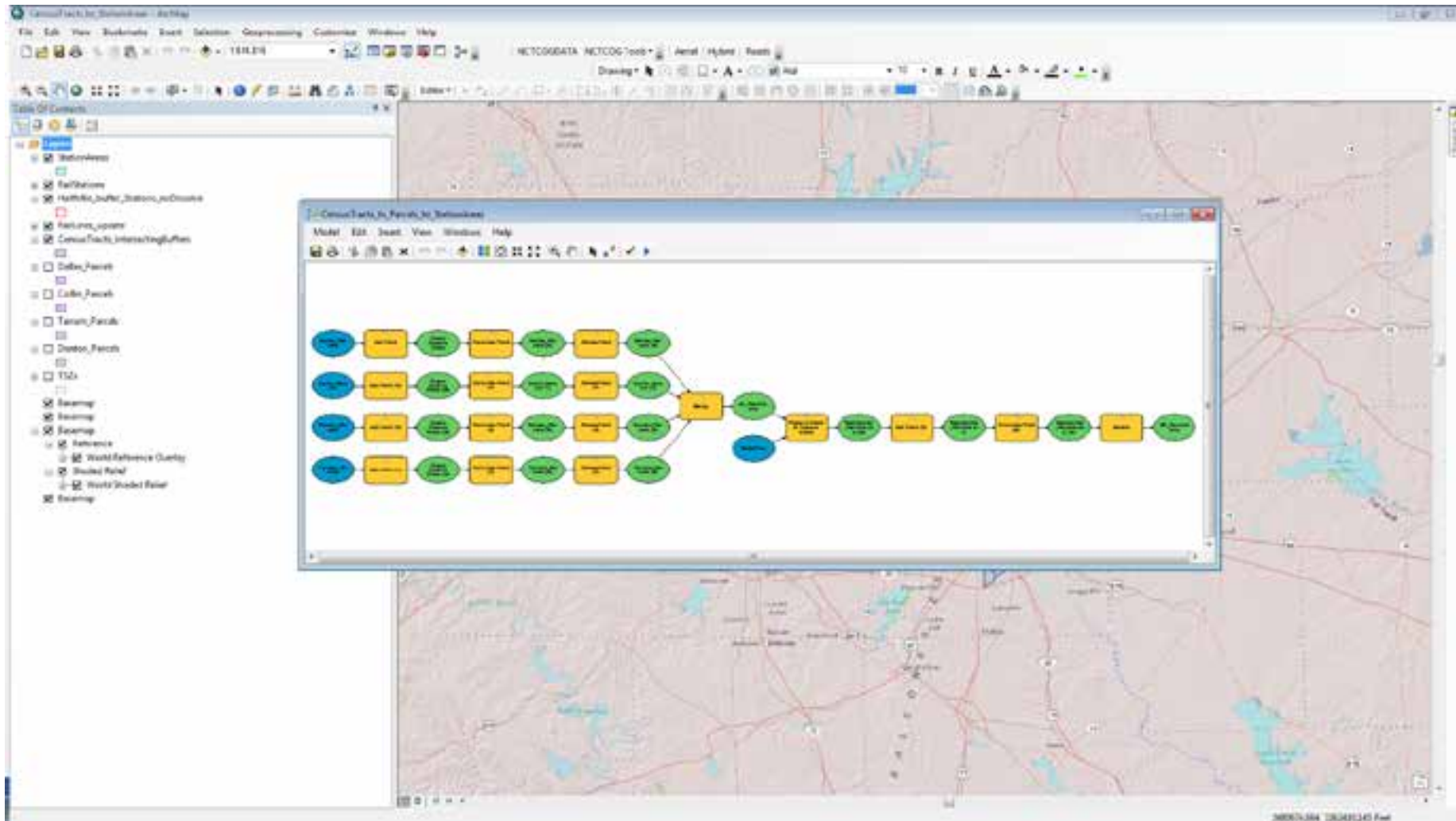
§ DATASETS

- STATION CHARACTERISTICS
- STATION AREA CHARACTERISTICS (ONE-HALF MILE)
- DEVELOPMENT CHARACTERISTICS

§ PRODUCTS

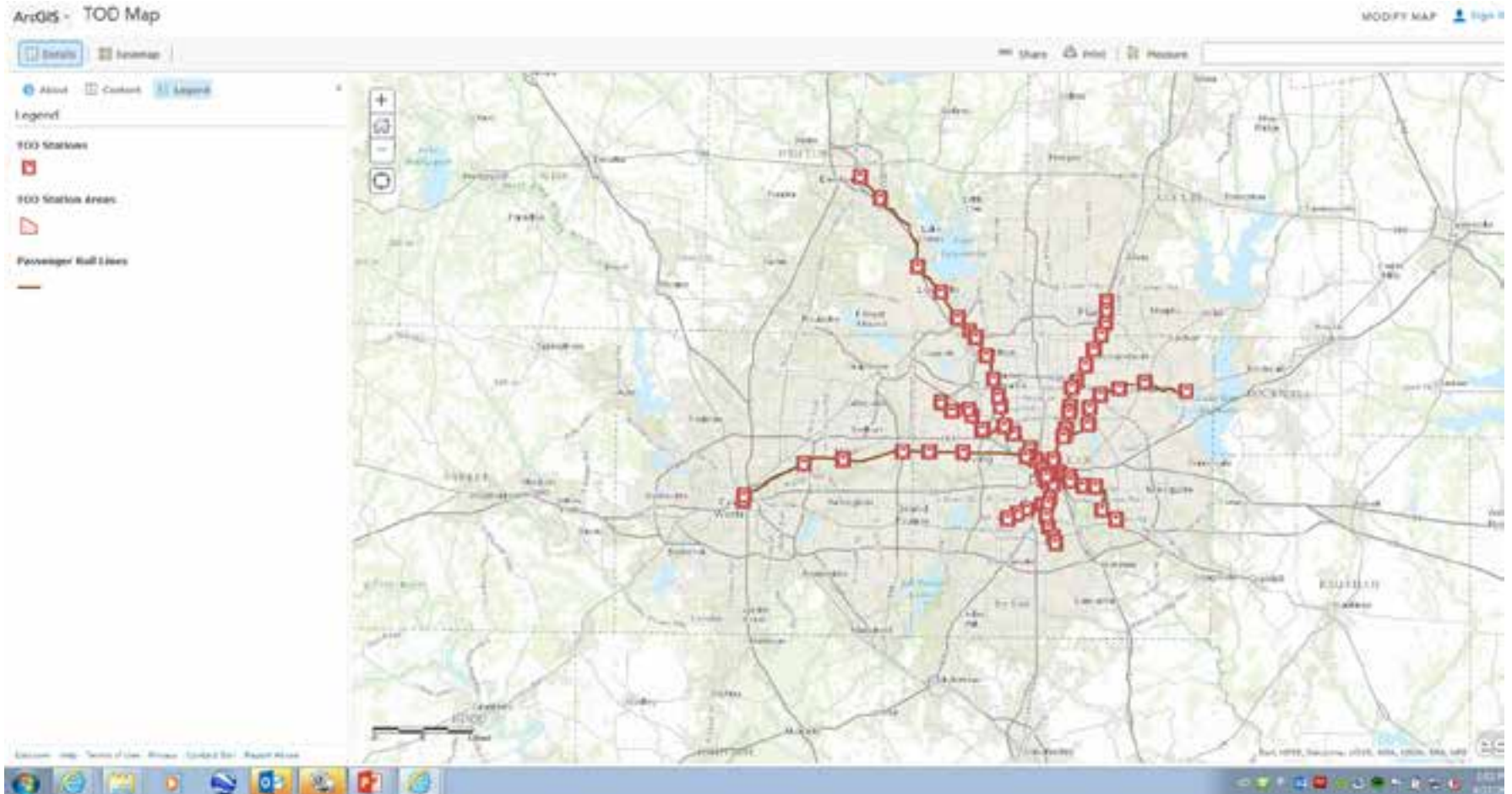
- INTERACTIVE ONLINE MAP
- STATION AREA FACT SHEETS
- TOD REPORT(S)

TOD Data Model

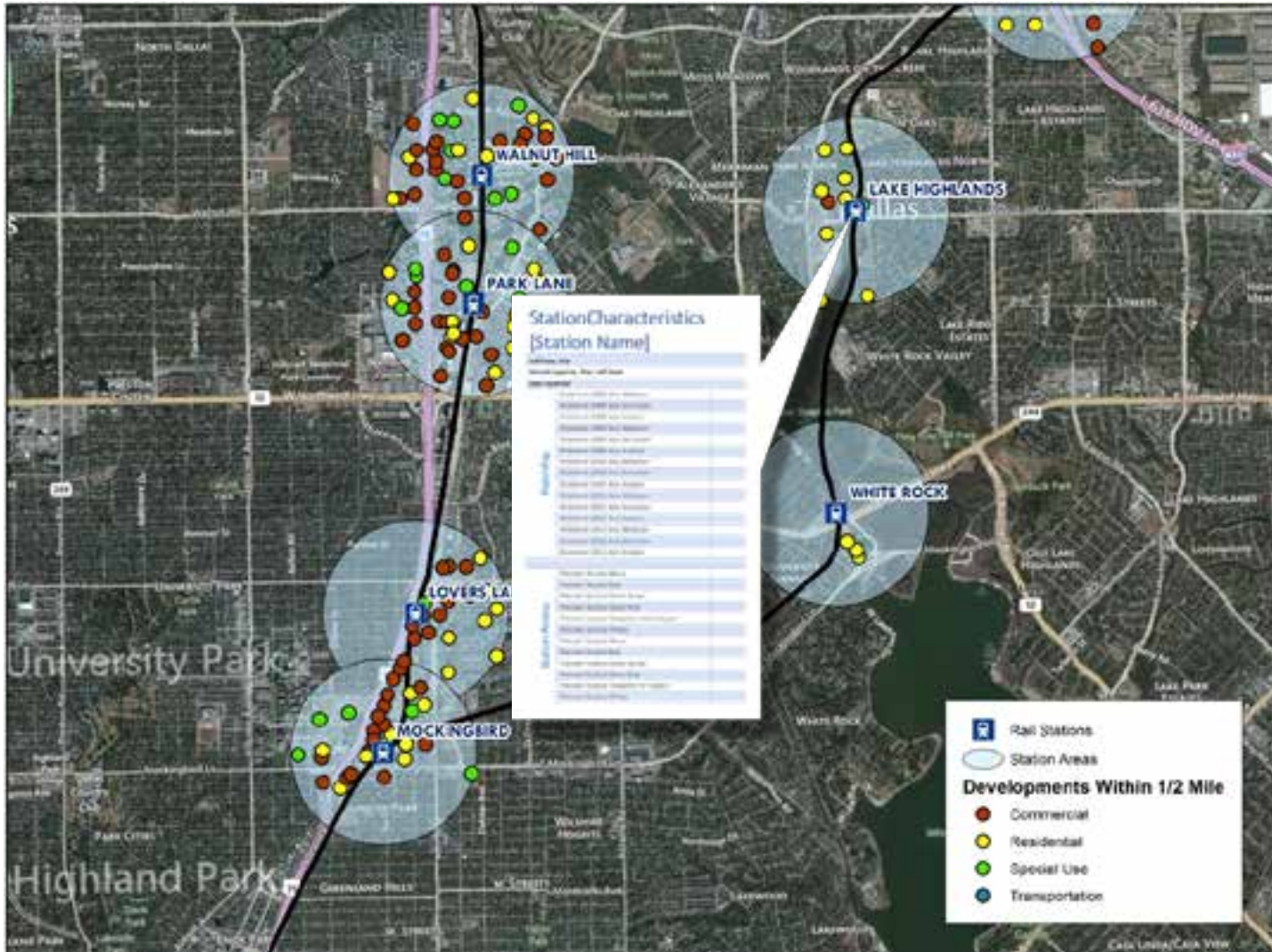


TOD Data Collection *INTERACTIVE MAP*

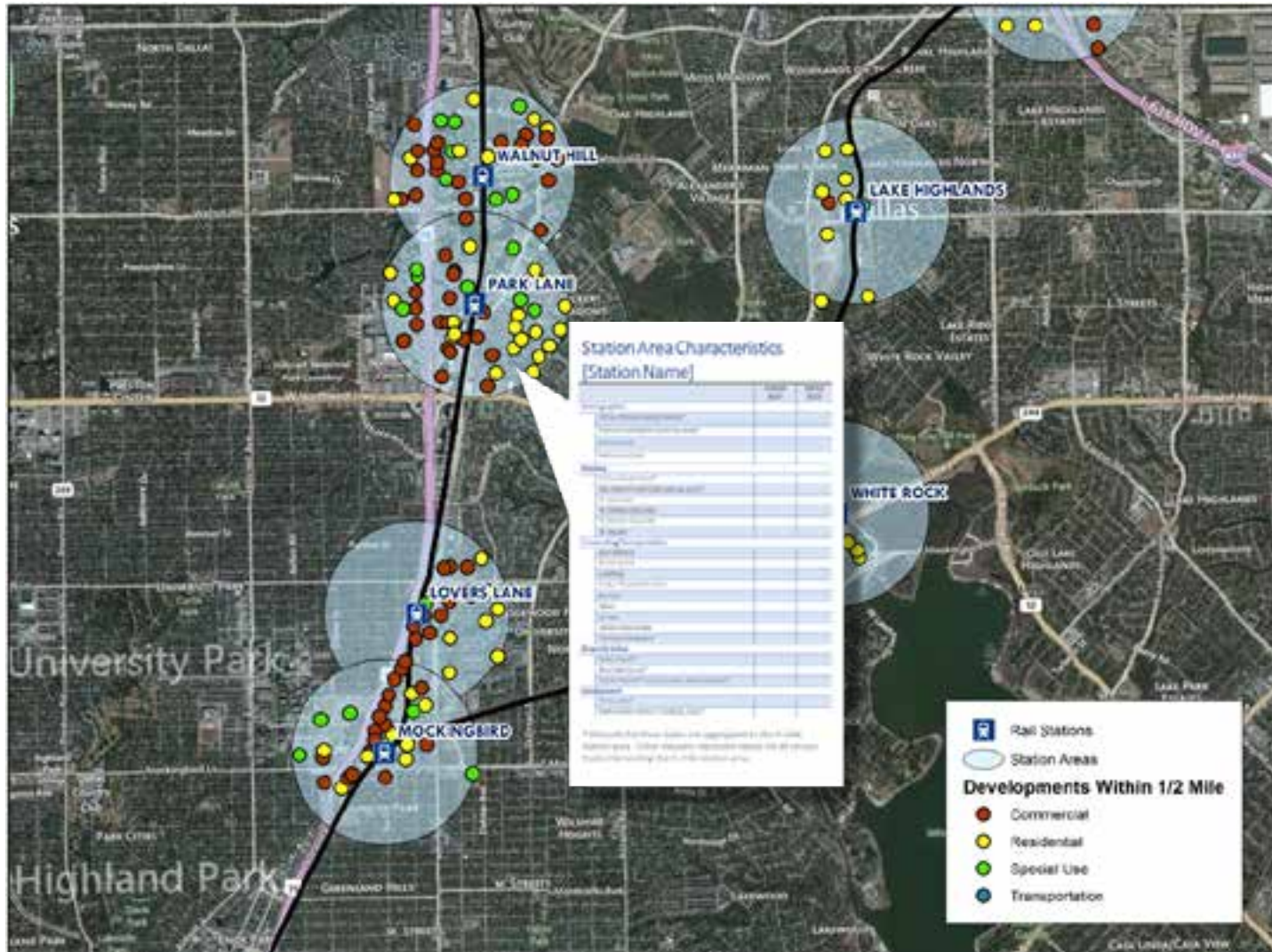
<http://www.nctcog.org/trans/sustdev/TOD/TODdatacollection.asp>



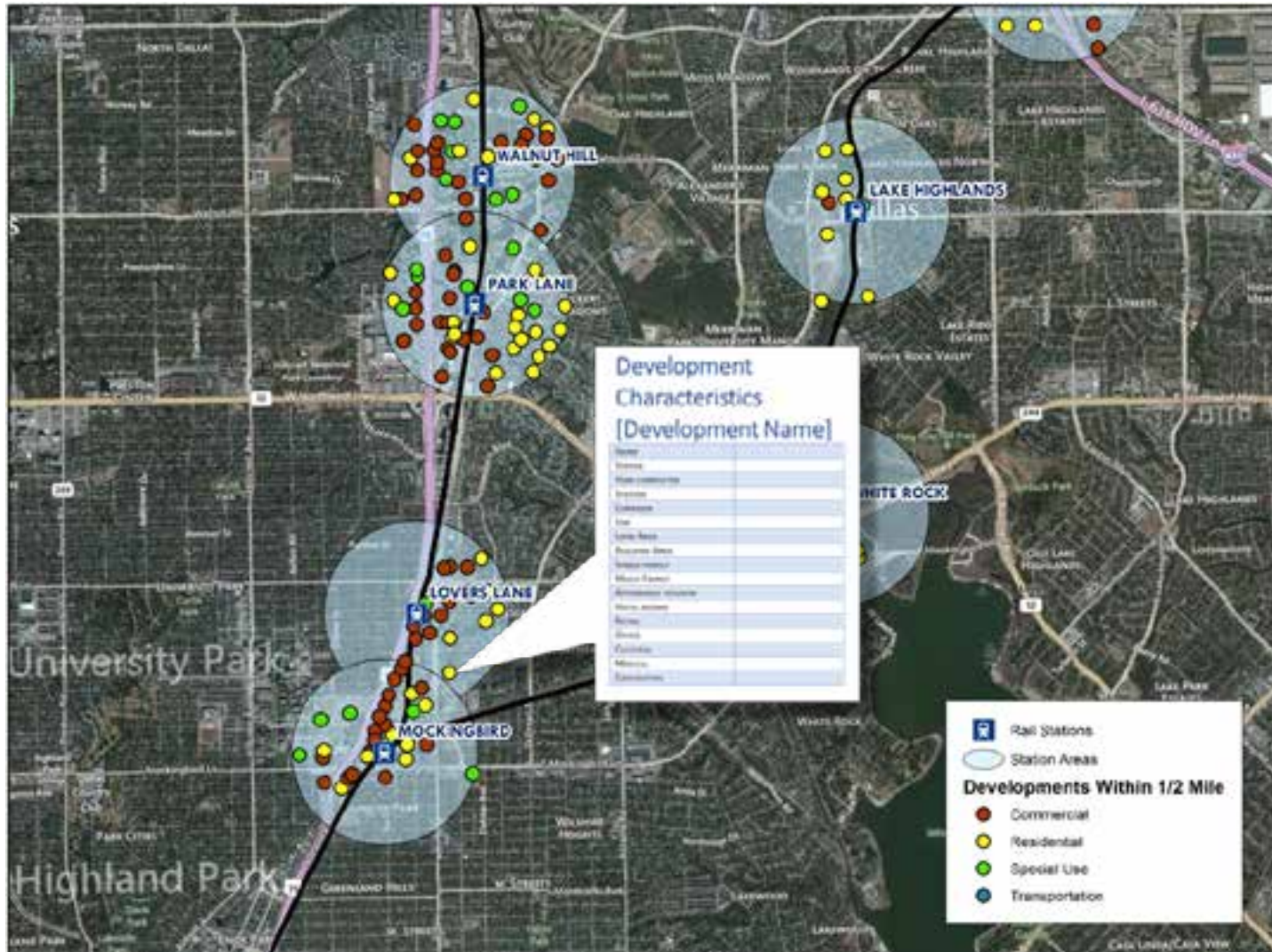
TOD Data Collection *INTERACTIVE MAP*



TOD Data Collection *INTERACTIVE MAP*



TOD Data Collection *INTERACTIVE MAP*



TOD Data Collection *STATION AREA FACT SHEETS*

Downtown Denton Station

Station Area Characteristics



Station Area Characteristics
[Station Name]

Characteristic	Value
Population	1,234
Area (sq. mi.)	0.5
Density (per sq. mi.)	2,468
Median Age	35
Median Income	\$45,000
Unemployment Rate	5%
Population Change (2000-2010)	+10%
Population Change (2010-2015)	+5%
Population Change (2015-2020)	+3%
Population Change (2020-2025)	+2%
Population Change (2025-2030)	+1%
Population Change (2030-2035)	+0.5%
Population Change (2035-2040)	+0.2%
Population Change (2040-2045)	+0.1%
Population Change (2045-2050)	+0.05%
Population Change (2050-2055)	+0.02%
Population Change (2055-2060)	+0.01%
Population Change (2060-2065)	+0.005%
Population Change (2065-2070)	+0.002%
Population Change (2070-2075)	+0.001%
Population Change (2075-2080)	+0.0005%
Population Change (2080-2085)	+0.0002%
Population Change (2085-2090)	+0.0001%
Population Change (2090-2095)	+0.00005%
Population Change (2095-2100)	+0.00002%

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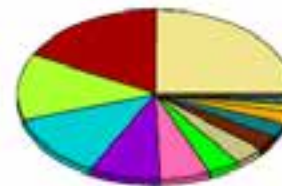
Source: NCTCOG Data, US Census Bureau 2007-2011 American Community Survey

Downtown Denton Station

Station Area Characteristics



Date: 08/23/15



Source: NCTCOG Data

Access to Rail (UPDATE 2002 STUDY)

Catalogue existing conditions at all rail stations

Needs Assessment: Analyzing on- and off-street facilities

§ Map with existing and recommended facilities for each station area

§ Supplemental Maps (land use, population, employment)

§ "Station Basics"

§ GIS Data available online

Audience:

§ Public, Transit Agencies, Governments

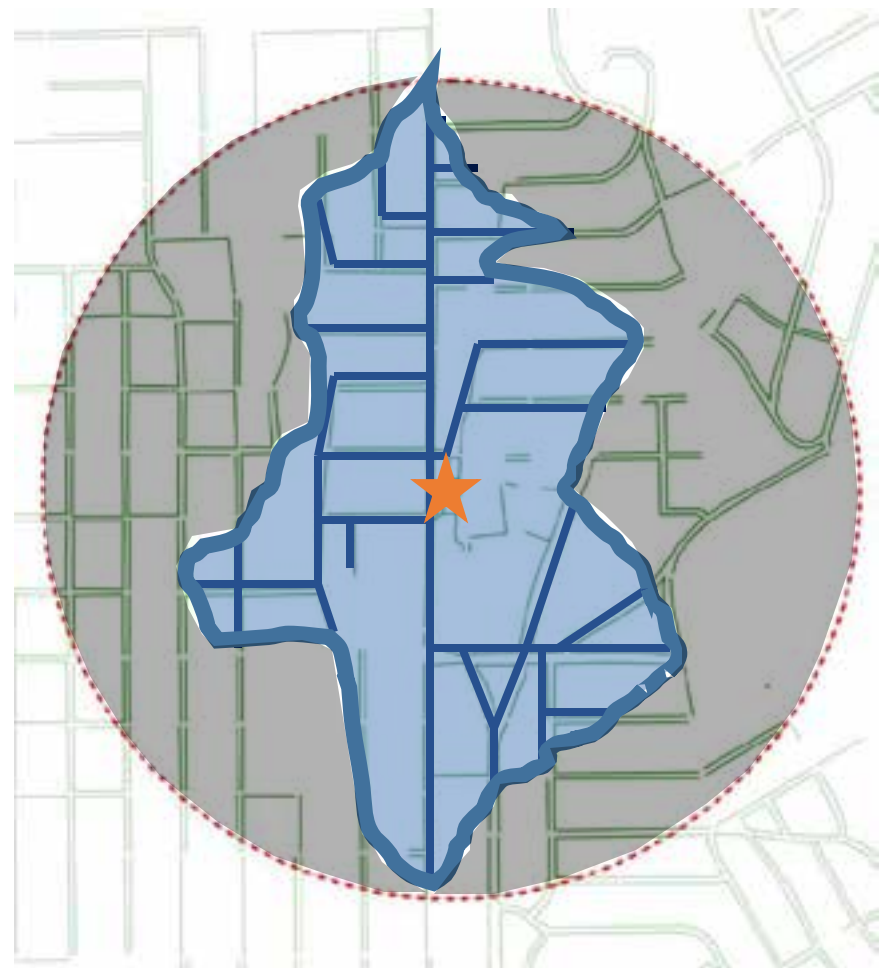
http://www.nctcog.org/trans/sustdev/bikeped/access_to_rail/index.asp



Rail Station		
Existing Facilities	Funded Facilities	Recommended Facilities
Sidewalk	Sidewalk	Sidewalk
Greenwalk	Greenwalk	Greenwalk
On-Street Route	On-Street Route	On-Street Route
Off-Street Trail	Off-Street Trail	Off-Street Trail

Access to Rail (“WALKSHEDS”)

Network-based assessment of accessibility to transit, based on mode (e.g. walking or bicycling)



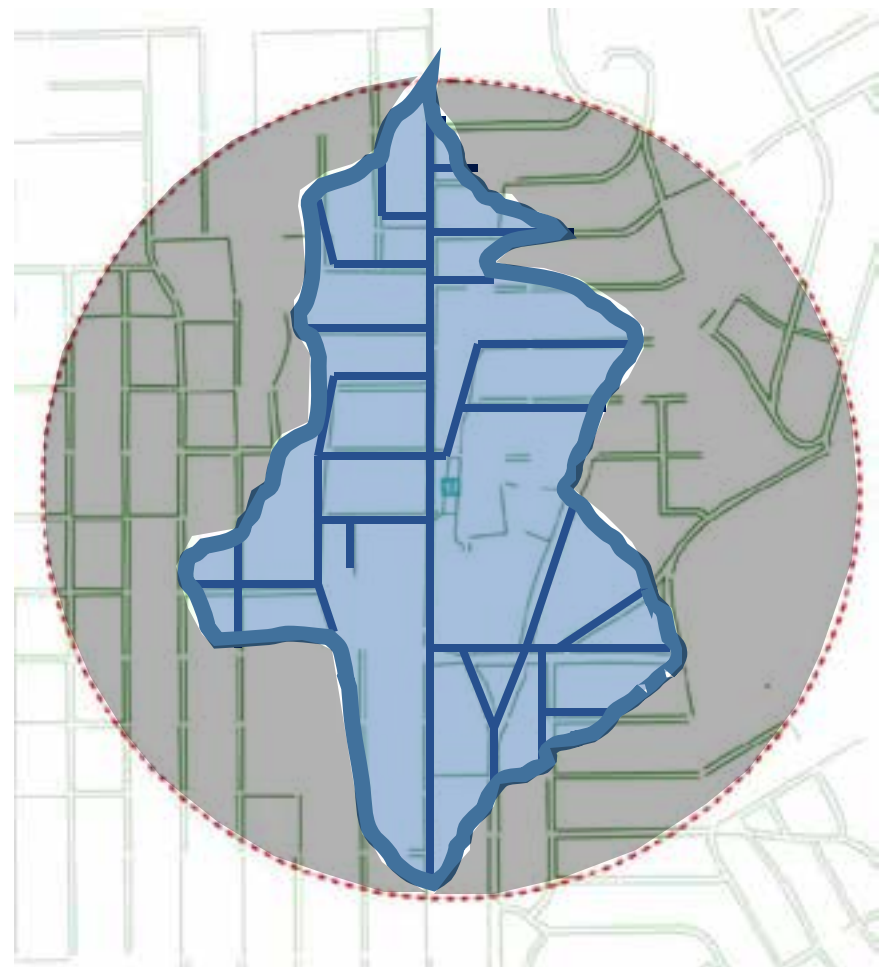
Access to Rail (“WALKSHEDS”)

Create new “Service Areas”
(polygons)

Fully integrate supplemental data
(land use, population, employment,
property values, etc) into the
database.

§ Bay Area Travel Survey (MTC,
2000):

The reduction in buffer size
caused more than a **30 percent
loss of sample** in the one-quarter
mile and one-half mile groups.



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<http://www.nctcog.org/trans/sustdev/TOD/TODdatacollection.asp>